

REMARKS

I. Introduction

With the cancellation without prejudice of claim 24, claims 14, 15, 19 to 22 and 25 to 27 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that the present application is in condition for immediate allowance, and reconsideration is respectfully requested.

II. Objection to Drawings

The Drawings were objected to under 37 C.F.R. § 1.83(a) as allegedly failing to show all features of the invention specified in the claims. It is respectfully submitted that this objection should be withdrawn for at least the following reasons.

Regarding the feature of claim 24 that diameters of the bore holes per level increase in a downstream direction, the Examiner will note that a new Figure 3 has been added herein. The new Figure 3 illustrates a schematic cross-sectional view of an embodiment of the atomization system, in which diameters of bore holes (8) in second section (10) of the atomization tube (4) increase in a downstream direction. In addition, the Specification has been amended to conform with the addition of Figure 3, as well as to disclaim the arrangement, dimensions and relative dimensions of the bore holes (8) depicted in Fig. 3, as requested. **Support for Figure 3 may be clearly found in claim 10 of the application as originally filed, as well as on page 3, lines 1 to 3, page 4, lines 28 to 29 and page 4, lines 34 to 35 of the Specification. No new matter has been added to the Drawings or the Specification. Therefore, approval and entry of the new Figure 3 is respectfully requested.**

Accordingly, it is respectfully submitted that the Drawings show all of the features of the invention specified in the claims.

In view of all of the foregoing, withdrawal of this objection is respectfully requested.

III. Provisional Double Patenting Rejection of Claims 14, 15, 19 and 25 to 27

Regarding the provisional double-patenting rejection, although the provisional rejection is not necessarily agreed with, Applicants are prepared to file a terminal disclaimer if and when a double patenting rejection, as opposed to a provisional double-patenting rejection, is made and upon withdrawal of all other rejections and an indication that the present application is otherwise in condition for allowance.

IV. Rejection of Claim 24 Under 35 U.S.C. § 112, 2nd Paragraph

Regarding the rejection of claim 24 under 35 U.S.C. § 112, second paragraph, as allegedly indefinite, claim 24 has been canceled without prejudice, thereby rendering moot the rejection. Accordingly, withdrawal of this rejection is respectfully requested.

V. Rejection of Claims 14, 15, 19 to 22 and 24 Under 35 U.S.C. § 102(b)

Claims 14, 15, 19 to 22 and 24 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 3,913,845 ("Tsuji") It is respectfully submitted that Tsuji does not anticipate these claims for at least the following reasons.

Claim 14 relates to an atomization system for a fuel, including: a fuel injector; an atomization tube including at least a first section and a second section, the first section having at least one of an outer diameter and a wall thickness that is different than that of the second section; an air inlet; and at least one metering aperture. The second section is formed at a downstream side of the first section. The second section includes a plurality of bore holes at each of a plurality of positions on an outer wall of the atomization tube, along a length of the atomization tube.

Although Applicants do not necessarily agree with the merits of the rejection, to facilitate matters, claim 14 has been amended to essentially incorporate the features of claim 24, claim 24 has been canceled without prejudice and claim 21 has been amended to conform with the amendments made to claim 14. In addition, since claim 24 was rejected under 35 U.S.C. § 112, second paragraph, as indefinite, the rejection will also be addressed in this section.

Claim 14 as amended recites, in relevant part, that **diameters of the bore holes at each position on the outer wall of the atomization tube along the length of the atomization tube increase in a downstream direction.**

Regarding the indefiniteness rejection of claim 24, the Examiner will note that the term “level” in the feature of claim 24, prior to cancellation, has been replaced, in amended claim 14, by the term “position,” which has proper antecedent basis in claim 14. Accordingly, it is respectfully submitted that claim 14 is sufficiently definite for at least these reasons.

Regarding the anticipation rejection of claims 14, 15 and 19 to 22, **Tsuji does not disclose, or even suggest, the feature of claim 14 that diameters of bore holes at each position on an outer wall of an atomization tube along a length of the atomization tube increase in a downstream direction. Contrary to the contentions appearing on page 7, lines 7 to 9 of the Office Action, Figure 4 of Tsuji only shows that major diameters of elliptical cross-sections formed by the intersection of a plane parallel to the major axis (O) of the cylindrical nozzle tip (4) and the nozzle holes (6a-6d) increase along the length of the nozzle tip (4) due to a decrease in the angle θ of the nozzle hole axes with the major axis (O) along the length of the nozzle tip (4). The actual diameters of the nozzle holes (6a, 6b, 6c, 6d) are all approximately equal.** Accordingly, it is respectfully submitted that Tsuji does not anticipate claim 14 or dependent claims 15 and 19 to 22 for at least these reasons.

In view of the foregoing, withdrawal of the anticipation and indefiniteness rejections is respectfully requested.

VI. Rejection of Claims 25 to 27 Under 35 U.S.C. § 103(a)

Claims 25 to 27 were rejected under 35 U.S.C. § 103(a) as unpatentable over Tsuji. It is respectfully submitted that Tsuji does not render these claims unpatentable for at least the following reasons.

Claims 25 to 27 ultimately depend from claim 14. As set forth in detail in Section V of this response, Tsuji does not disclose, or even suggest, all of the features of claim 14. Accordingly, it is respectfully submitted that Son et al. does not render unpatentable claims 25 to 27, which depend from claim 14.

In view of the foregoing, withdrawal of this rejection is respectfully requested.

VII. Conclusion

It is therefore respectfully submitted that the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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